Department of Energy
Richland Operations Office
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9100752

91-PPB-372

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Mr. Al W. Conklin, Head
Air Emissions and Defense Waste Section
Division of Radiation Protection
Department of Health
Airdustrial Park Building 5, LE-13
Olympia, Washington 98504-0095

Dear Mr. Conklin:

618-9 BURIAL GROUND EXPEDITED RESPONSE ACTION - NOTIFICATION OF POTENTIAL IMPACTS TO AIR QUALITY

On October 18, 1990, an agreement in principle between the U.S. Department of Energy, Richland Operations Office (DOE-RL), the U.S. Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (Ecology) was signed. This agreement established the Hanford Site 618-9 Burial Ground as a candidate project for consideration for expedited response actions (ERA) under the *Comprehensive Environmental Response, Compensation and Liability Act*. On December 20, 1990, following review of the technical basis, costs, and feasibility of implementing this project, the EPA and Ecology requested that DOE-RL prepare a detailed project plan and initiate non-intrusive site investigations.

The ERA at the 618-9 Burial Ground will proceed in two phases. The first phase will begin with site characterization activities and end with drum liquid removal. The second phase will encompass soil and liquid treatment and disposal activities. The enclosed air quality notification has been prepared to document the potential impacts to air quality which may result from activities associated with the first phase of the 618-9 Burial Ground ERA, scheduled to commence on February 19, 1991.

It is possible that excavation and liquid removal activities could result in the release of extremely small amounts of radioactively contaminated materials to the atmosphere. Because very limited data is available on the buried wastes, it is not possible to estimate the dose consequences of the proposed activities at this time. However, efforts will be taken to ensure that the substantive requirements of 40 Code of Federal Regulations 61, Washington Administrative Code (WAC) 402-80, and WAC 173-403 are met.

Pursuant to 42 United States Code 9621, Section 121(e)(1), "No federal, state, or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite, where such remedial action is selected and is carried out in compliance with this section." Hence, this notification is being provided for information only. No regulatory approval is required prior to initiation of the proposed activities.

If you have any questions or comments regarding this transmittal, please contact Mr. S. D. Stites on (509) 376-8566, or Mr. R. K. Stewart of my staff on (509) 376-6192.

Sincerely,

EA Brachen

R. D. Izatt, Director
Environmental Restoration Division

ERD:SDS

Enclosure:
618-9 Burial Ground ERA - Notification
of Potential Impacts to Air Quality

cc w/encl:
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NOTIFICATION OF POTENTIAL IMPACTS TO AIR QUALITY
618-9 BURIAL GROUND EXPEDITED RESPONSE ACTION

1.0 BACKGROUND INFORMATION

The 618-9 Burial Ground is a single, 200-foot-long trench, approximately 18 feet wide and 8 feet deep. The burial ground, located in the Hanford Site 600 Area just west of the 300 Area, is believed to have been in operation from 1950 to 1956. The trench is suspected to contain approximately 5000 gallons of uranium-contaminated organic solvent. The trench has been removed from service and backfilled. Minor subsidence has occurred at the burial ground, and the physical integrity of the disposed drums is unknown.

Hanford Site databases indicate that the 618-9 Burial Ground received approximately 100 55-gallon drums of uranyl nitrate hexahydrate (UNH)-contaminated organic solvent (hexone) and a mixture of tributyl phosphate/normal paraffin hydrocarbon. The total UNH content is estimated to be approximately 10 tons. However, oral interviews and lack of historical documentation cause the data to be suspect.

Based on the limited data, the drummed liquid is expected to contain a natural distribution of uranium isotopes. Natural uranium consists primarily of uranium-238 with a small amount (less than 1 percent) of uranium-234 and uranium-235. The total inventory of uranium is estimated to be 9930 pounds. However, oral interviews with former Hanford Site employees indicate that the solvent in the drums may be the product of distillation processes. If this is the case, the drums may not contain any significant quantity of uranium.

2.0 PROJECT DESCRIPTION

The expedited response action (ERA) at the 618-9 Burial Ground will proceed in two phases. The first phase is limited to site characterization and removal of the liquid contents of the buried drums to above ground onsite storage. The empty drums will remain in the burial ground trench and will be stabilized, inerted, and reclosed, awaiting phase two action. Cleanup of leakage from the drums, if any, and liquid treatment and disposal will be undertaken in phase two. This notification pertains to only the first phase of activities at the 618-9 Burial Ground.

Because of the many uncertainties at the 618-9 Burial Ground, the project plan must take into account different possible scenarios. The buried drums may be intact or leaking, upright or jumbled. Initial safety precautions will be conservative and will assume, as a worst case, that full drums of uranium-saturated hexone are buried.

Geophysical mapping and soil gas surveys are underway at the waste site. Once the data from these nonintrusive activities have been analyzed, the first drum will be excavated. Initiation of excavation activities is expected to occur on February 19, 1991. Overburden will be removed from a series of eight-foot-long sections of the trench, by machine, to within one foot of the

top of the drums. Final excavation of the drums will be carried out by hand. During excavation, a fan may be used to prevent occupationally dangerous levels of organics from accumulating in work areas directly over the trench.

A drum opening tool will be used to open the drums, if intact, to obtain samples. Samples will be analyzed for chemical composition and radionuclide content. Any liquids found in the buried drums will be pumped into above ground 55-gallon drums in overpack for temporary storage. Liquid disposition will occur as a part of the second phase of the ERA. If the buried drums are corroded and no liquids remain, the drums will be sampled and disposed of appropriately in phase two of the project. The first phase of the ERA will be complete after the liquids are safely removed from the trench.

3.0 IMPACTS

Routinely expected releases and resultant dose impacts from the proposed activities are expected to be well within applicable U.S. Department of Energy and regulatory limits. No credible event has been postulated which could produce significant dose impacts during normal operations or likely process upsets. The excavation and liquid removal activities may result in the release of extremely small amounts of radioactively contaminated materials to the atmosphere. Because of the limited historical data regarding inventory in the burial ground, precautions will be taken to ensure minimal emissions.

Excavation and drum pumping will proceed in a manner that will expose only a few drums at a time to minimize potential risks. Dräger™ tubes and photoionization detectors will be used at the waste site to monitor organic levels in the air for worker health and safety. Health physics personnel equipped with hand-held radiation monitoring equipment will monitor potential sources of contamination. In addition, one or more portable, continuous air monitoring stations will be operated at the 618-9 Burial Ground work site. The monitor(s) will be located so as to obtain representative sampling of any potential radioactive air emissions resulting from the ERA.

Releases would most likely result from spills or leaks. Controls will be in place to limit the amount of uranium at any one location that might be released to air in the event of a process upset. Access to the burial ground will be limited to protect personnel, and prompt action in the event of a spill or leak will reduce the potential for contaminating the environment.

4.0 CONCLUSION

Pursuant to 42 USC 9621, Section 121(e)(1), "No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite, where such remedial action is selected and is carried out in compliance with this section." Hence, this notification is being provided for information only. No regulatory approval is required prior to initiation of the proposed activities. Efforts will be taken to ensure

that the substantive requirements of 40 CFR 61, WAC 246-247, and WAC 173-403, as well as other applicable, relevant, and appropriate requirements (ARARs), are met.

Liquid waste and soil samples will be analyzed for radionuclide content prior to initiation of soil and liquid treatment and disposal activities. The results of the analyses will be made available to the regulatory agencies upon request. Quantitative estimates of any fugitive emissions from the proposed activities will be included in Hanford Site annual release reports.

CORRESPONDENCE DISTRIBUTION COVERSHEET

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Subject: 618-9 BURIAL GROUND EXPEDITED RESPONSE ACTION - NOTIFICATION OF POTENTIAL IMPACTS TO AIR QUALITY

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